

The Importance of Early Childhood Experience



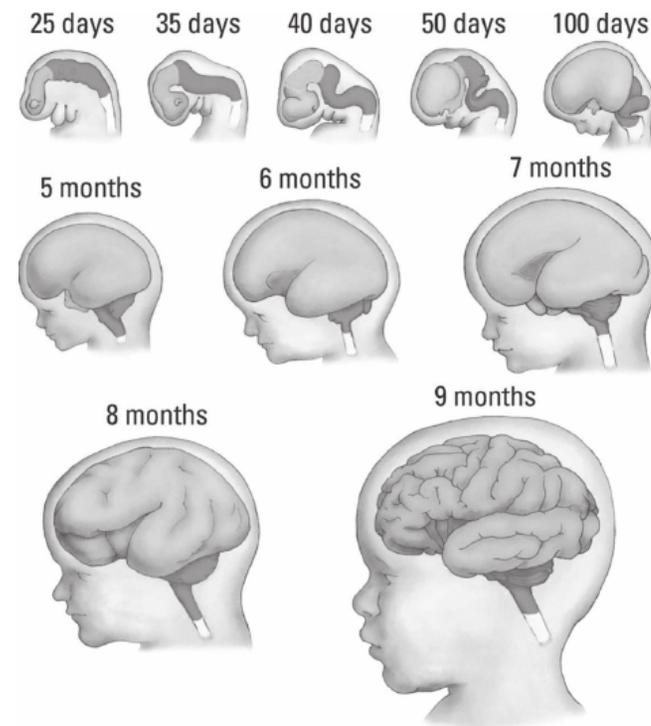
Geoffrey Nagle, PhD, MSW, MPH
Clayton Early Learning
Denver, CO
May 5, 2021

Early Experience

- Early experience is the “smoking gun” for both **education** success and long-term **health**.
 - Things that happen early in life leave biological memories in your body.
 - “Gets under your skin”

Brain Architecture

- Major Stages of Brain Development
 - Neural tube formation
 - Cell proliferation
 - Cell differentiation
 - Cell migration
 - Cell connections
 - Synaptic pruning
 - Myelination



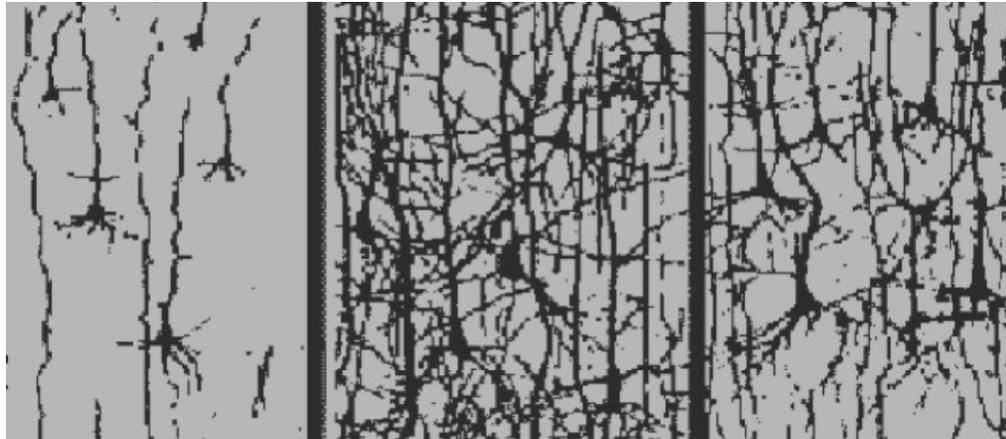
Gilkinson & Klein/Zero to Three (2008)

Synapse Formation

Birth

2 Years Old

6 Years Old



- Synapse formation peaks at the rate of 40,000 per second between 3 and 15 months of age.

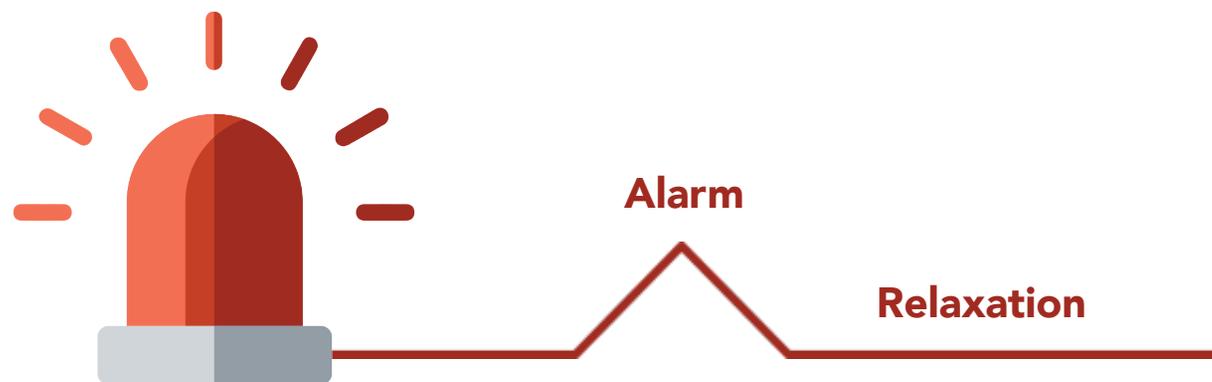
The Brain Changes its Structure and Function in Response to Experience

- Plasticity
 - The brain is adaptable and can be influenced by positive experiences (nurturing/stimulating)
 - The brain is vulnerable and can be harmed by negative experiences (fearful, scary, stress)

Toxic Stress



Tolerable Stress



Toxic Stress



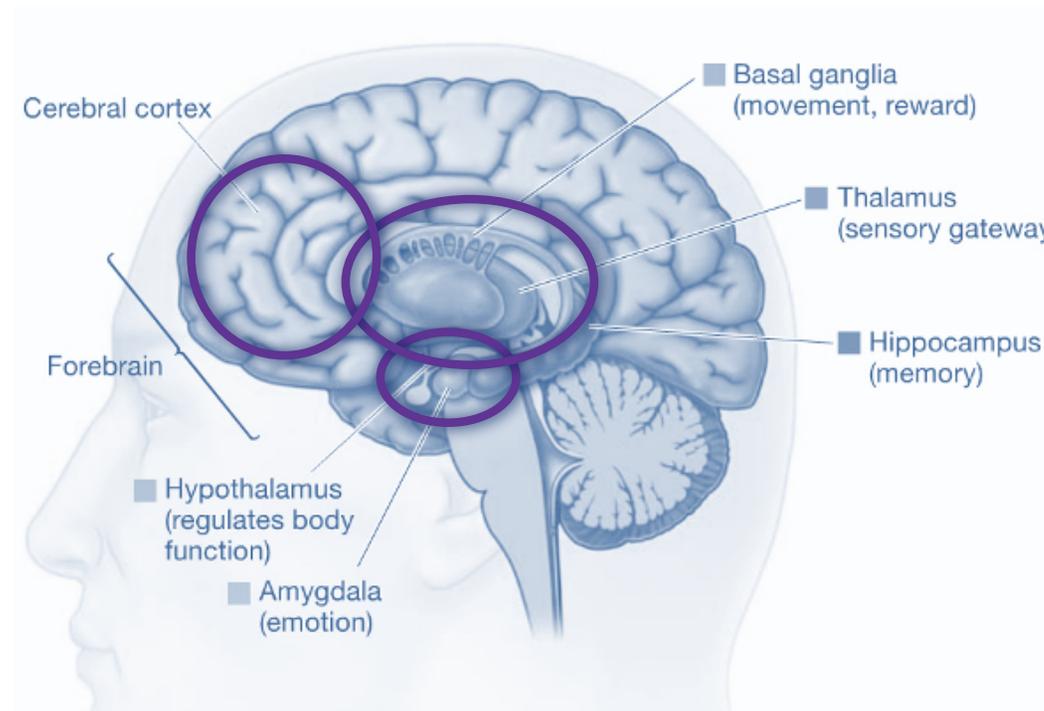
The Body's Response to Stress

- Increase in heart rate
- Increase in blood pressure
- Increase in breathing rate

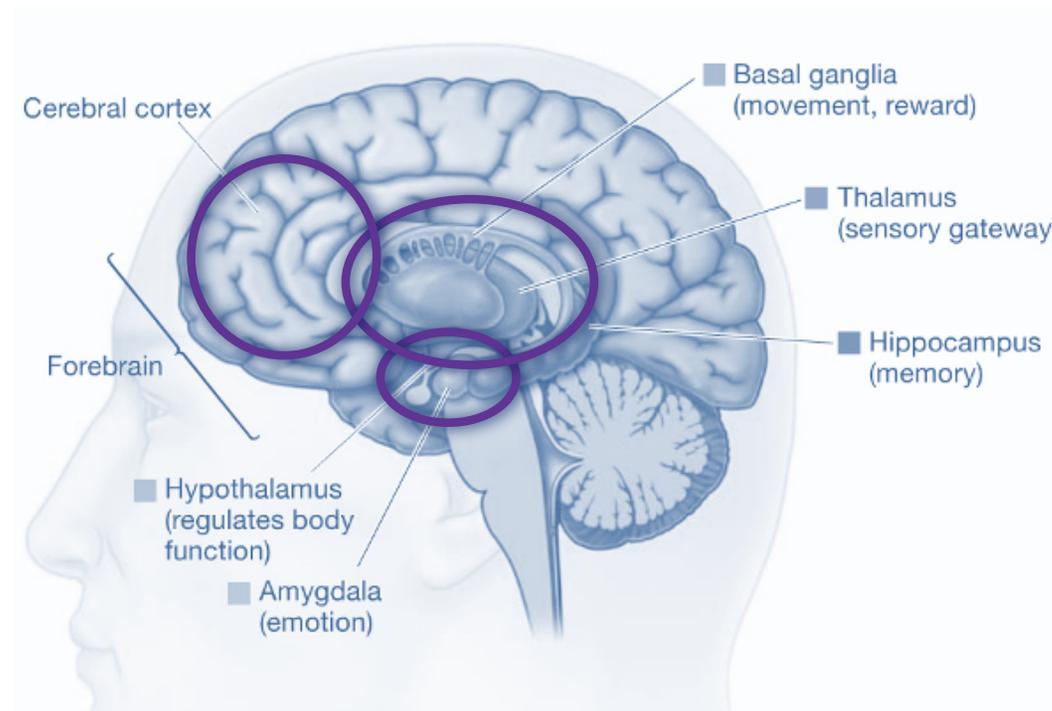
Cortisol

- Suppresses the immune system
- Impairs memory/shrinks hippocampus
- Impairs selective attention
- Creates anxious behavior

The Brain Architecture of **Anxiety and Fear**



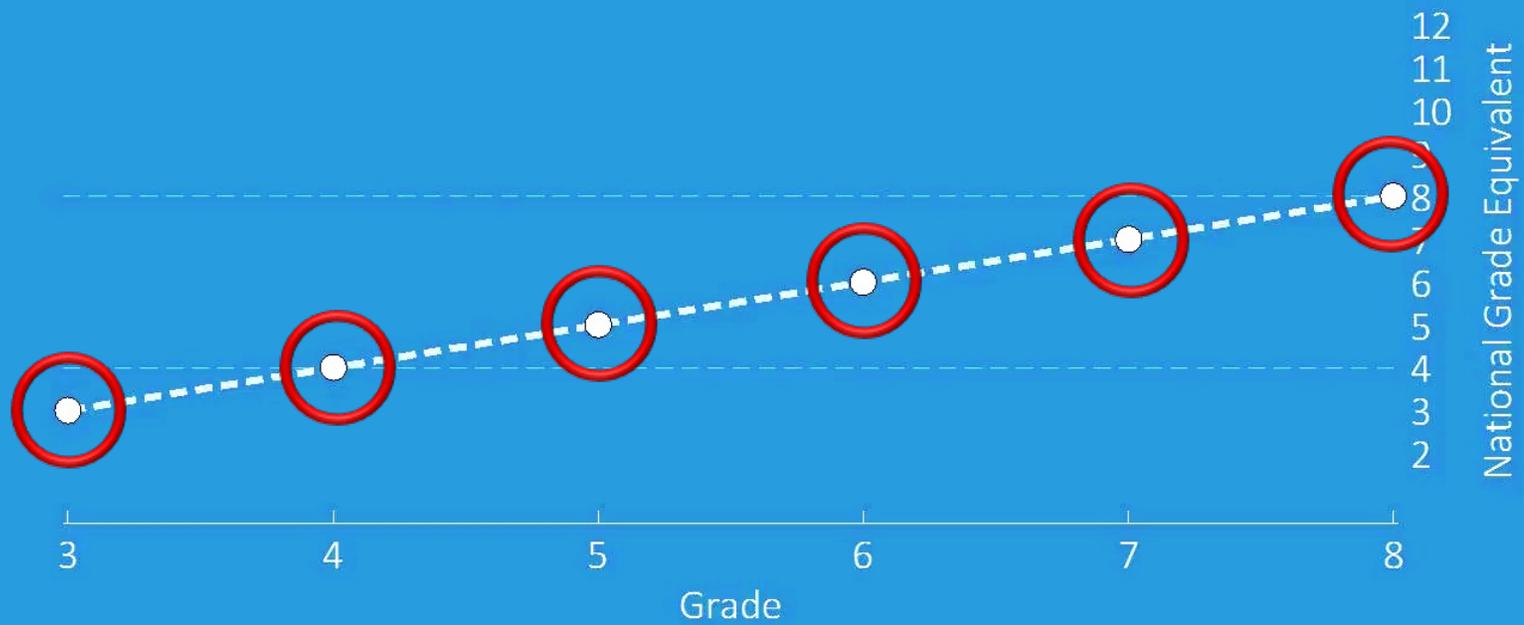
The Brain Architecture of **Memory and Learning**



Successful Schools

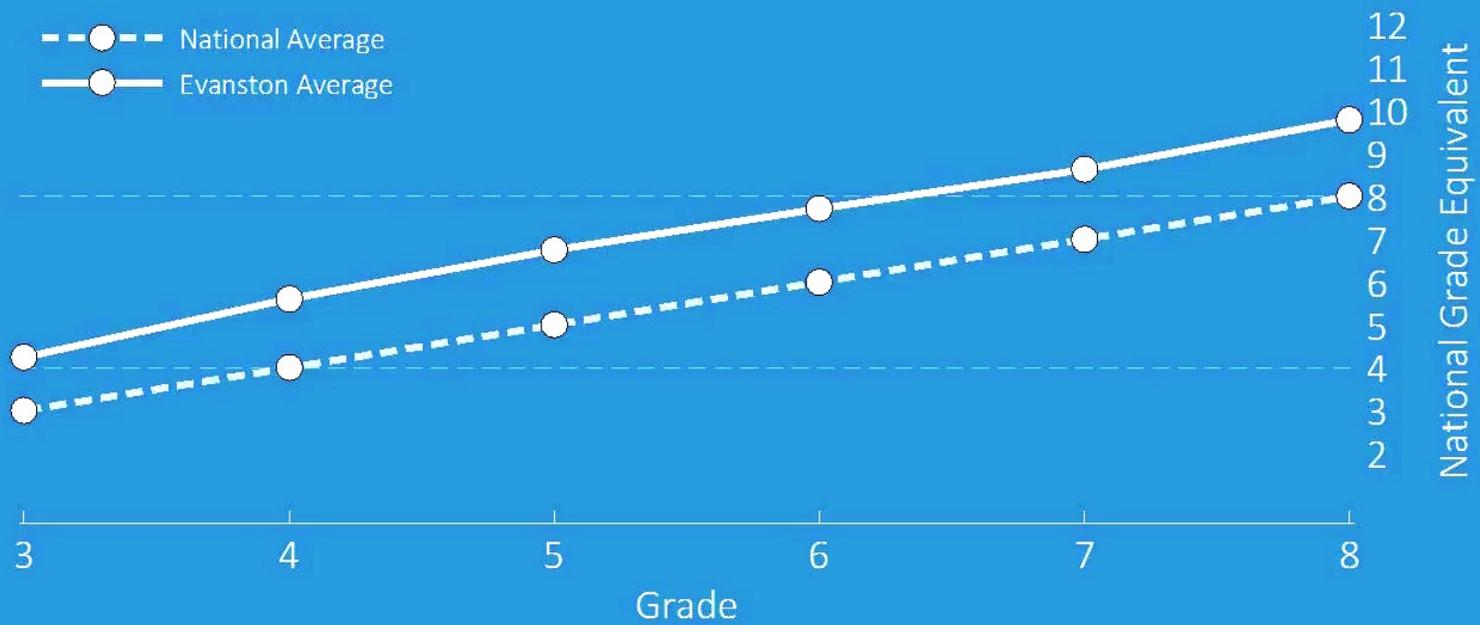


Average Academic Achievement, by Grade National Average



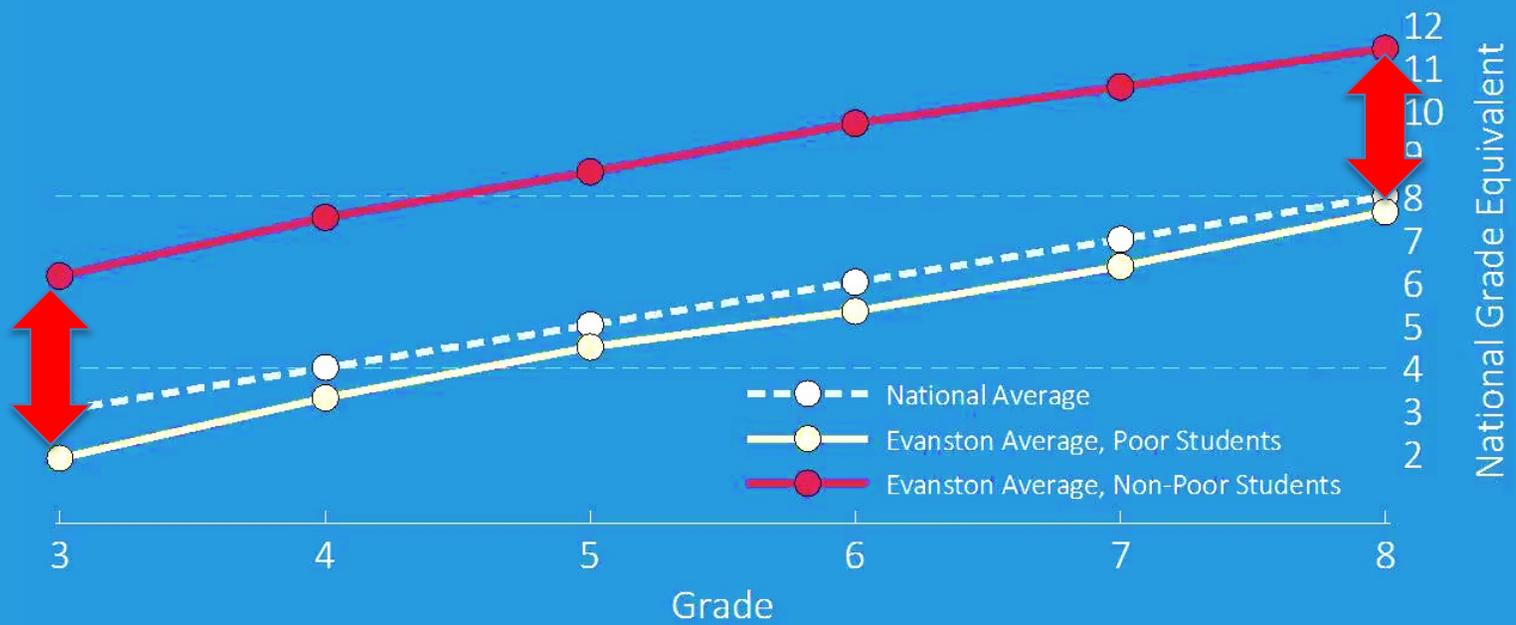
Reardon, 2017

Average Academic Achievement, by Grade Evanston

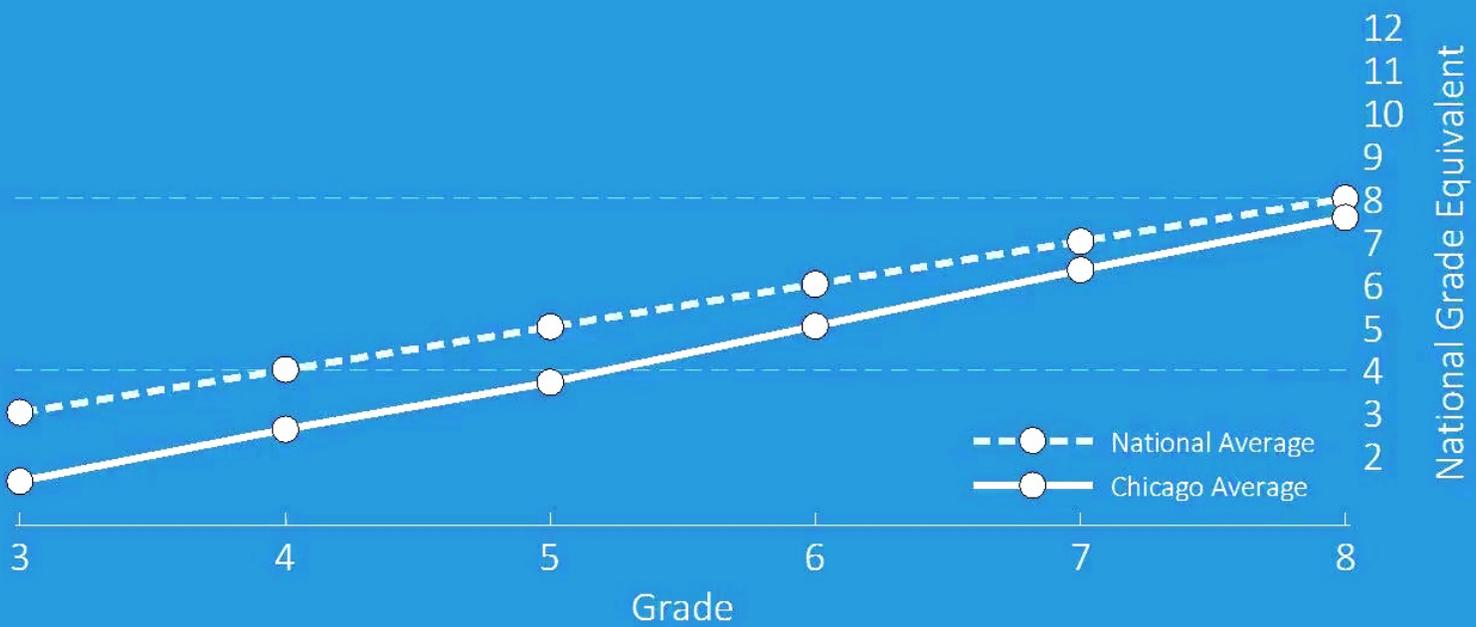


Reardon, 2017

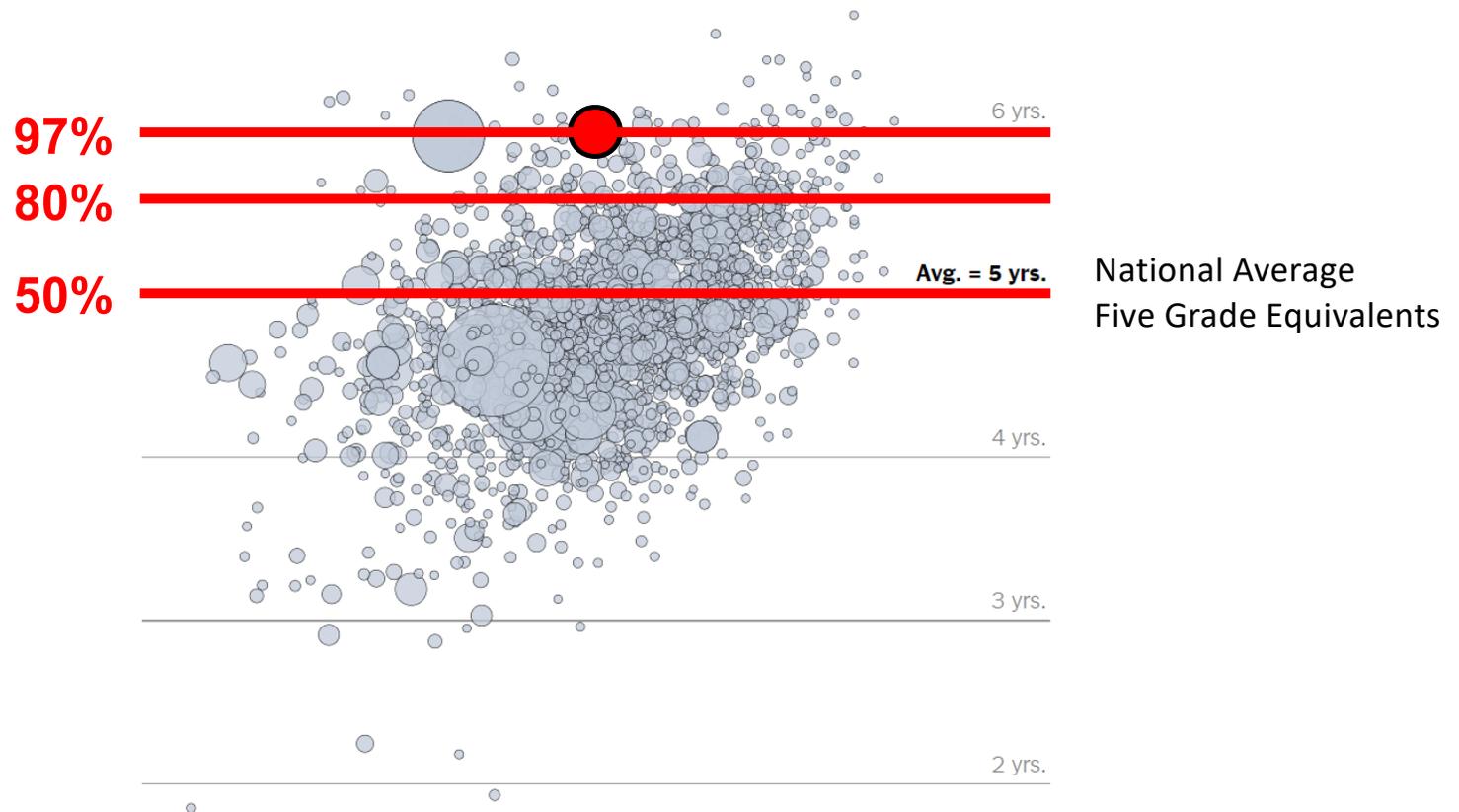
Average Academic Achievement, by Grade Evanston



Average Academic Achievement, by Grade Chicago, 2009-2013

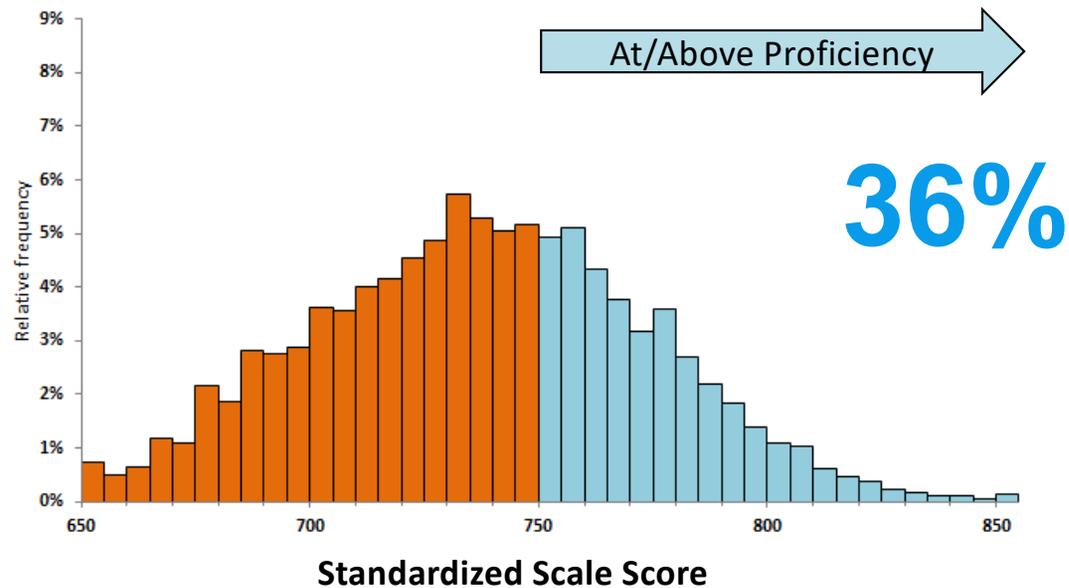
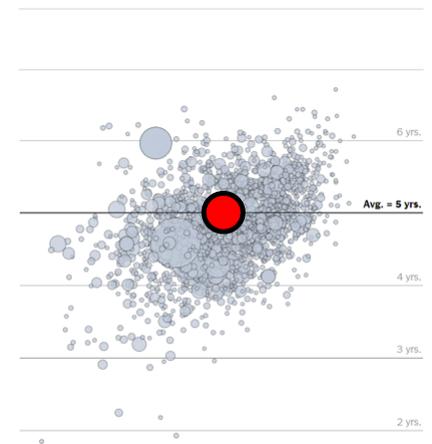


5 Year Academic Growth



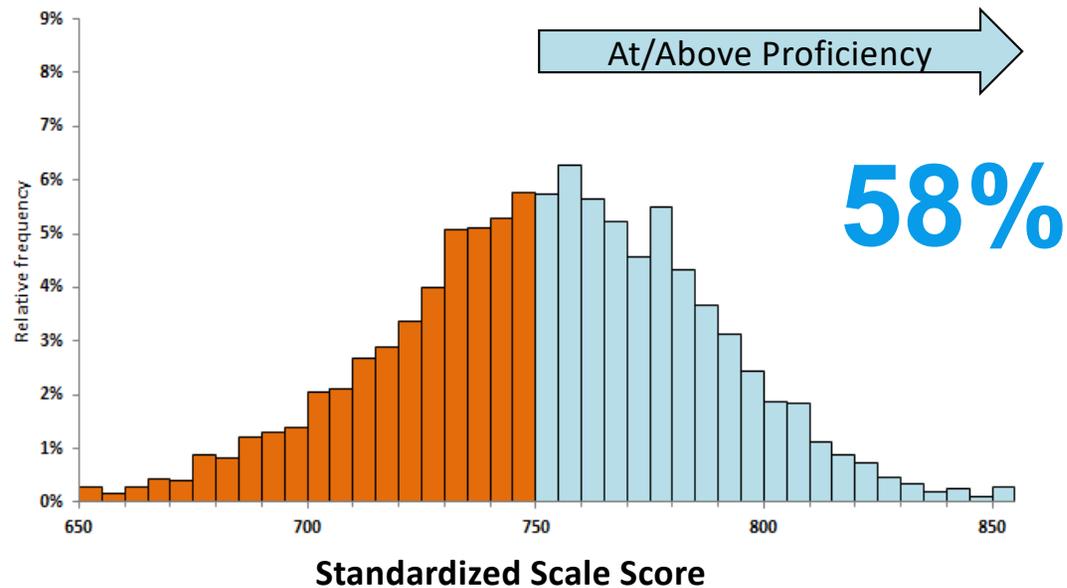
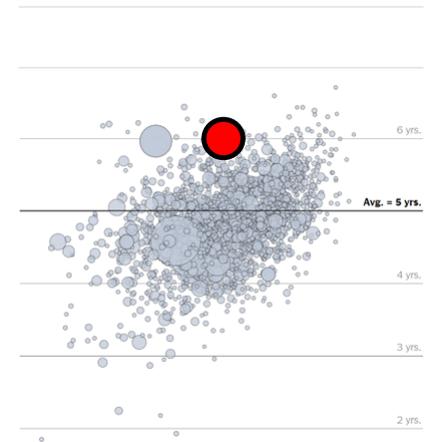
SOURCE: New York Times – *Upshot* (2017), “A Better Way to Compare Public Schools,” based on data from the Stanford Education Data Archive and the research of Sean Reardon

Example – Expected Academic Achievement



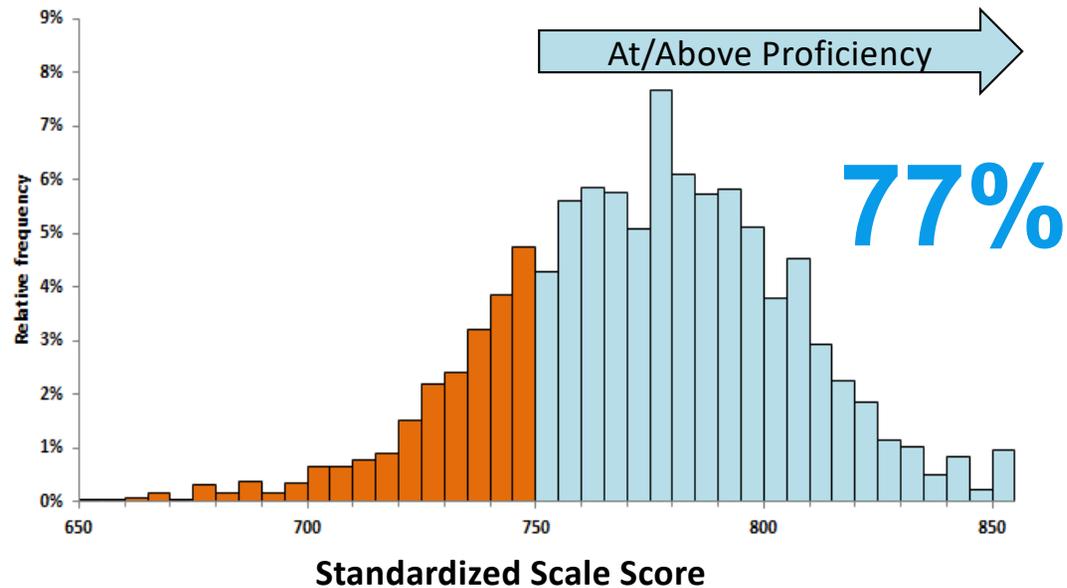
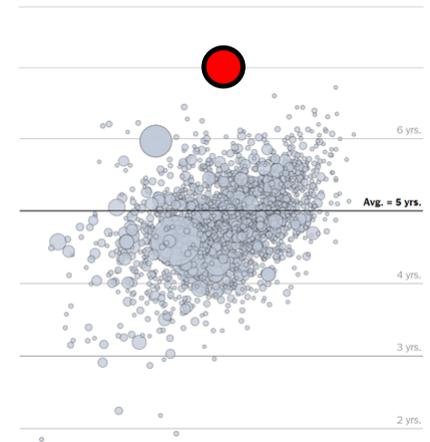
SOURCE: Regenstein, E., Boer, B., & Zavitkovsky, P. (2018). Establishing Achievable Goals.
Available at <http://www.advanceillinois.org/publications/establishing-achievable-goals/>

With One Additional Year of Achievement Growth



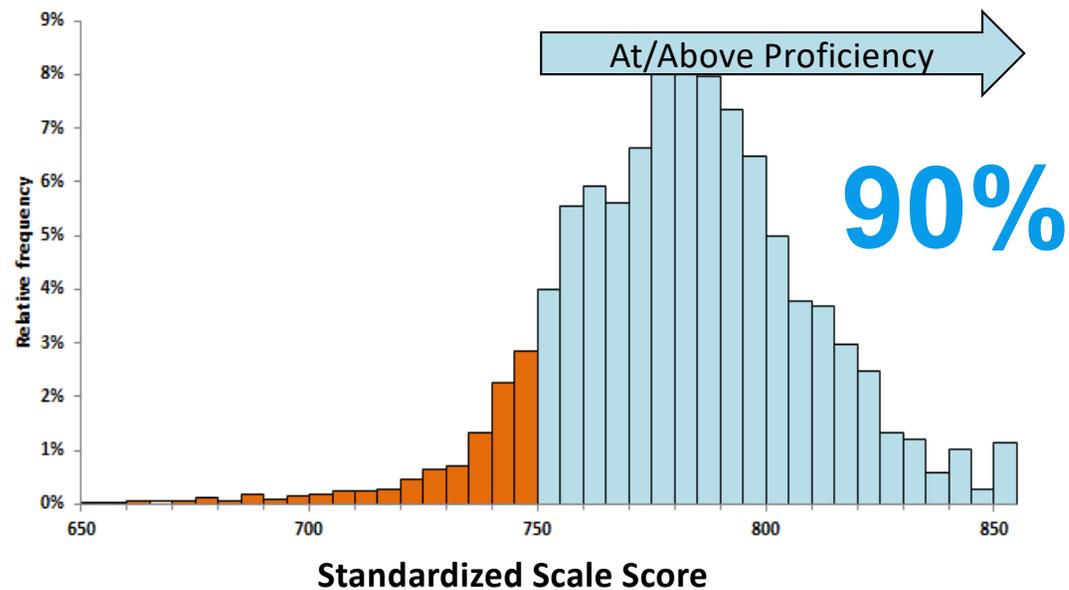
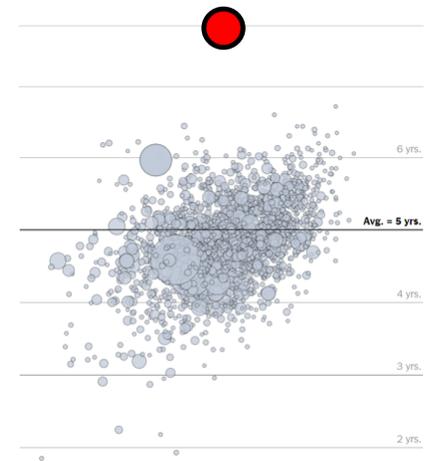
SOURCE: Regenstein, E., Boer, B., & Zavitkovsky, P. (2018). Establishing Achievable Goals.
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With Two Additional Years of Achievement Growth



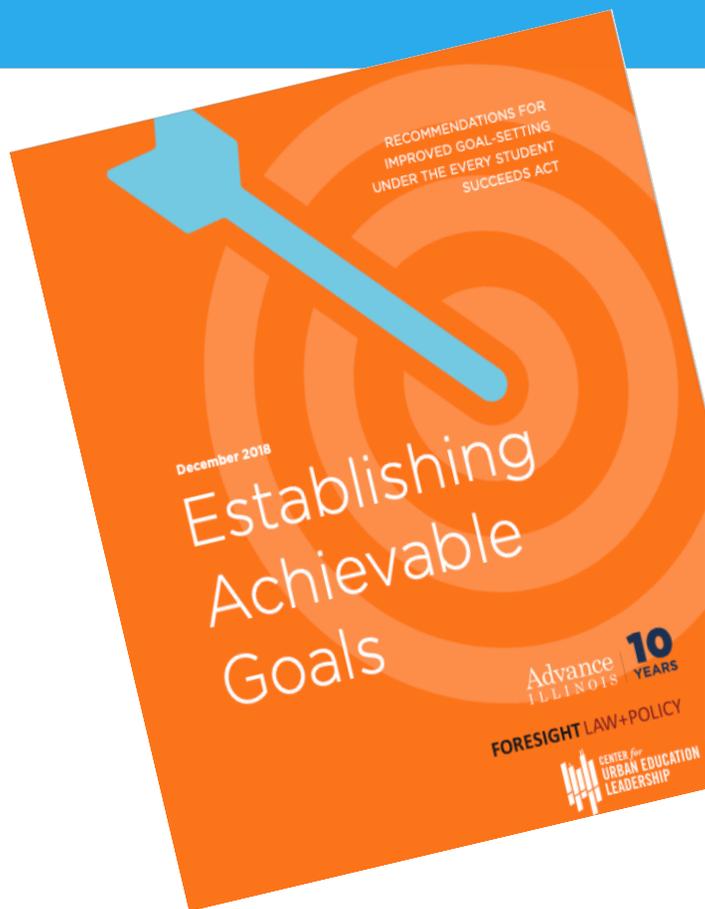
SOURCE: Regenstein, E., Boer, B., & Zavitkovsky, P. (2018). Establishing Achievable Goals.
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With Three Additional Years of Achievement Growth

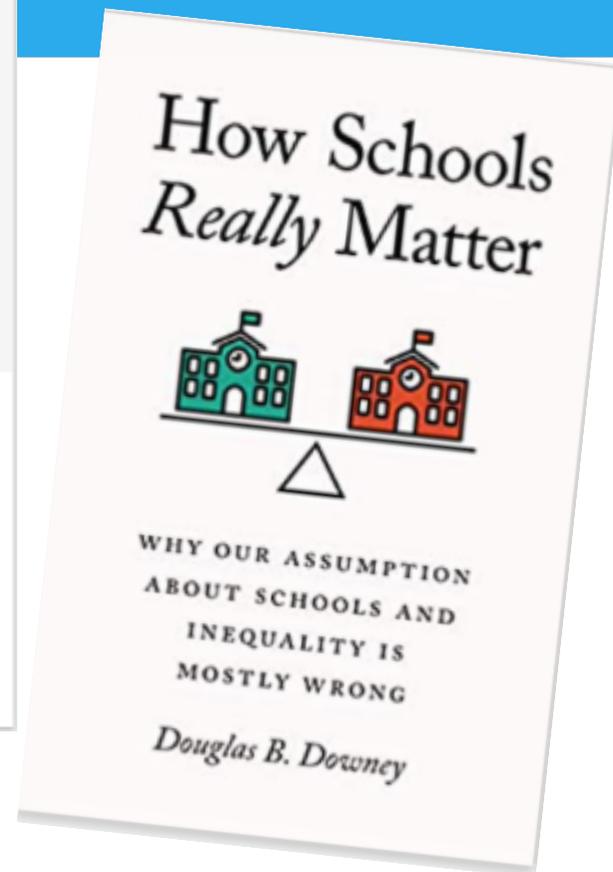


SOURCE: Regenstein, E., Boer, B., & Zavitkovsky, P. (2018). Establishing Achievable Goals. Available at <http://www.advanceillinois.org/publications/establishing-achievable-goals/>

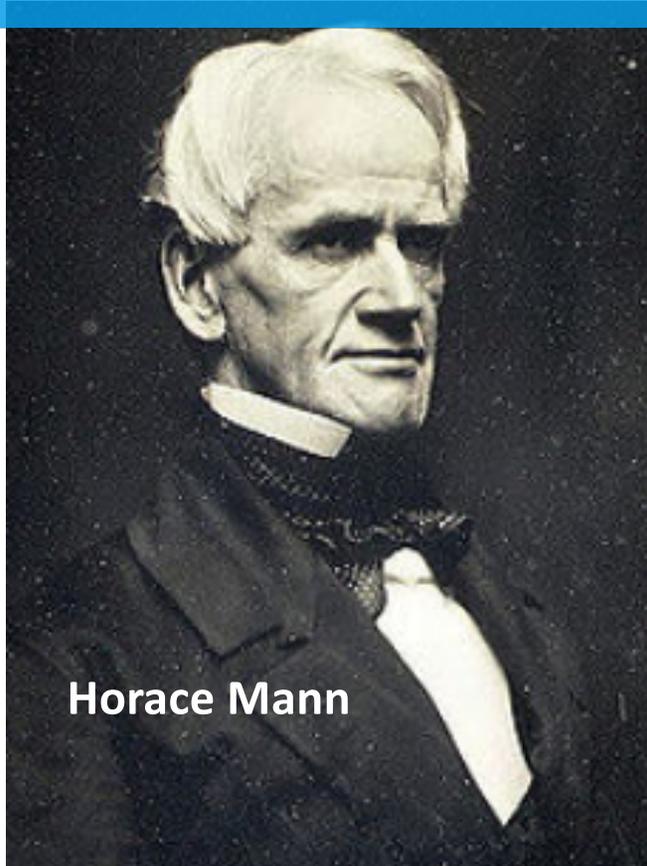
Resources



<https://edopportunity.org>



The Father of American Public Education



Horace Mann

Education – 1850-2021

- 1946 – National School Lunch Act
- 1954 – Brown vs. Board of Education
- 1965 – Elementary and Secondary Education Act
- 1975 – Education for All Handicapped Children Act
- 1990 – Individual with Disabilities Education Act
- 2002 – No Child Left Behind Act
- 2015 – Every Student Succeeds Act



Education – 2021 – The Big Question

If you were building the system today,
would you start at age 5???

Policy and Program Opportunity

- Home visiting programs
- Universal pre-K (3 and/or 4 year-olds)
- Quality vs. Quantity Child Care
- Expanded subsidies and tax credits for ECE
- Intensive focus on 0-3 (Early Head Start)
- Pay parity between Child Care and Schools
- Infant mental health services
- Paid parental leave

Closing Thoughts

- Invest in in early experience, not just early education
 - Be comprehensive (0-5)
- Need to build from prenatal/birth up
 - Not from K-12 down

A young child with light brown hair, wearing a white long-sleeved shirt with a purple vest and dark blue pants, is sitting on a windowsill. The child is looking out a window at a street scene. Outside, there are several cars parked on the street, bare trees, and a building in the background. The text "1,100 Days" is overlaid in large white font across the center of the image.

1,100 Days

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